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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,669	02/24/2000	Ulrike Jeck-Prosch	32140-153023	5754

26694 7590 12/03/2003

VENABLE, BAETJER, HOWARD AND CIVILETTI, LLP  
P.O. BOX 34385  
WASHINGTON, DC 20043-9998

EXAMINER

CLEVELAND, MICHAEL B

ART UNIT PAPER NUMBER

1762

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/512,669	JECK-PROSCH ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael Cleveland	1762	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 43,51 and 52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 43,51 and 52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/24/2003 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 43 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Willer et al. (U.S. Patent 5,801,325, hereafter '325).

Claims 43 and 51: '325 teaches compositions of solid propellants dispersed in binders, such as hydroxy-terminated polybutadiene and glycidyl azide polymer (col. 6, line 60-col. 7, line 20). It appears that the formulations must have been made by a mixing (i.e. surface-treating) process, such as the one described using PGN (col. 3, lines 10-24; col. 5, line 64-col. 6, line 2; col. 8, lines 36-52). The propellant is dispersed in the binder, and therefore the binder must coat the propellant. Therefore, the propellant is "layered".

4. Claims 43 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Lutz (U.S. Patent 5,520,757, hereafter '757).

Claims 43 and 51: '757 teaches mixing (i.e., surface treating) nitrocellulose (a monobasic propellant powder in colloidal form (i.e., an emulsion)) with alkyl nitrate ethyl nitramines (alkyl NENAs) (col. 3, lines 11-29). The product is colloidal (i.e., a suspension of one material within another) and therefore layered.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 43, 51, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Meara et al. (U.S. Patent 5,682,009, hereafter '009) in view of Lutz (U.S. Patent 5,520,757, hereafter '757).

Claim 43: Also, '009 teaches providing a monobasic propellant (col. 2, lines 54-64), mixing (i.e., surface treating with) a propellant powder in slurry with nitroglycerin, an energetic, monomer softener (col. 5, lines 1-12), mixing (i.e., surface treating with) at least one inert polymer (col. 5, lines 13-37), such as the cellulose esters listed in col. 4, lines 1-60, and drying the propellant (col. 5, lines 37-40) to recover particles treated with the reagent (col. 6, lines 36-48). The product is layered because it contains particles (16) dispersed within particulate (10) (See Fig. 1).

'009 teaches adding nitroglycerin to a nitrocellulose to form a double base propellant powder, as described above. It does not teach adding an alkyl nitratoethyl nitramine (NENA). However, '757 teaches alkyl NENAs as advantageous replacements for nitroglycerin for the reasons given in col. 1, lines 15-54. The alkyl NENAs include compounds such as methyl NENA (col. 2, lines 51-56). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the nitroglycerin of '009 with the methyl NENA of '757 in order to have achieved the resistance to crystallization described in col. 1, lines 15-54 of '757 with a reasonable expectation of success.

Claims 51-52: The mixing is performed by applying the polymer in an aqueous solution (col. 5, lines 13-22) and heating the solution over time and allowing the polymer to penetrate into the propellant grains (i.e., by incubating in an impregnating solution).

*Response to Arguments*

7. Applicant's arguments filed 9/24/2003 have been fully considered but they are not persuasive.

Applicant states that the present application does not intend to seek protection for mono-base, di-base or tri-base powders, but for a method for the surface treatment of propellant powders for the ammunition used in barrel weapons. The argument is not convincing because the Applicant's claimed "method for producing a layered-mono-, di-, or tri-basic propellant granules" does not exclude that the granules may be powders.

Applicant argues that Applicant's coating is not uniformly distributed, as demonstrated by accompanying photographs. The argument is unconvincing because it is not commensurate in scope with the claim because the claims state only that the product is "layered"; they do not exclude the possibility that the product is layered by homogeneously or heterogeneously dispersing a material within the granule. Applicant's remarks regarding the figures are noted. However, the PTO has received only 4 sheets of Figures. Furthermore, the features of the photographs are not clear—Applicant's Figure 1 and the "not coated" portions of Figures 2 and 3 appear completely black.

Applicant appears to argue that unexpected results regarding temperature change of the claimed invention are demonstrated by the Examples and drawings. These arguments are unconvincing because they are not commensurate in scope with the claims, which do not contain any reference to temperature change, and which are not limited to the conditions and materials of the Examples.

Applicant argues that Willer and Lutz produce materials with a uniform composition. The Examiner agrees that Willer uniformly disperses a propellant material within a binder and Lutz produces a colloid (which appears to have uniform dispersion). However, the claims do not exclude such constructions; they merely require that the product be "layered", which it is in both cases because the propellant powder is dispersed within another material. Thus the other material contacts (i.e., coats) the surface of the powder.

Applicant argues that O'Meara contains different materials than those listed in the claims. The argument is unconvincing because it does not specifically point out how the language of the

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claims patentably distinguishes them from the references. Applicant further argues that O'Meara also discloses that "the particulates may be coated with graphite" and argues the resulting structure does not follow from the O'Meara reference. The Examiner notes that coating with graphite further renders the O'Meara particle "layered", the only structure required by the claims. See also Figure 2, which demonstrates that the particles of O'Meara are layered.

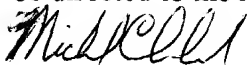
Applicant argues that Lutz is not directed to surface treatment for influencing the combustion behavior but rather to the production of a base material for the propellant powder. The argument is unconvincing because the claims are directed to "A method for producing layered mono-, di-, or tri-basic propellant granules". Thus, the claims do not exclude that the claimed method may be achieved by producing a base material for a propellant powder.

Applicant argues that no plasticizer is claimed in Willer. The argument is unconvincing because no plasticizer is mentioned within Applicant's claims. Willer teaches mixing (i.e., surface treatment) using materials within the group specifically claimed by Applicant.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (571) 272-1418. The examiner can normally be reached on Tuesday-Friday and alternate Mon, 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Michael Cleveland  
Patent Examiner  
November 30, 2003